

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-22 are pending in the present application. Claims 1 and 9 are amended and Claim 22 is added by the present amendment.

Claim amendments and additions find support in the application as originally filed, at least in figures 5 and 6 and page 19, line 20-27 and page 22, lines 7-15, thus, no new matter is added.

In the outstanding Office Action, Claims 1, 4-9, 12, 14-17, 20 and 21 were rejected under 35 U.S.C. §103(a) as unpatentable over Elyasaf et al. (U.S. Pat. No. 6,930,770, herein "Elyasaf"); Claims 2, 10 and 18 were rejected under 35 U.S.C §103(a) as unpatentable over Elyasaf in view of Murakami et al. (U.S. Pat. No. 5,017,798, herein "Murakami"); Claims 3, 11 and 19 were rejected under 35 U.S.C. §103(a) as unpatentable over Elyasaf in view of Murakami and Nikoonahad (U.S. Pat. No. 6,919,957, herein "Nikoonahad"); and Claims 5 and 13 were objected to as dependent upon a rejected base claim but would be allowable if rewritten in independent form.

Initially, Applicants gratefully acknowledge the indication of the allowable subject matter in Claims 5 and 13. However, since Applicants consider that Claims 1 and 9 patentably define over the cited art, Claims 5 and 13 depending respectively therefrom have presently been maintained in dependent form.

Applicants respectfully traverse the rejection of Claims 1, 4-9, 12, 14-17, 20 and 21 under 35 U.S.C. §103(a) as unpatentable over Elyasaf.

Amended Claim 1 recites, in part,

a space separation mechanism which is provided in the vicinity of an optical focal plane toward the pattern formed surface of the substrate, and spatially separates an irradiation area of the first inspection light and the second inspection light

such that the transmitted light through the substrate is imaged in one area on the optical focal plane separated from another area where the reflected light from the substrate is imaged.

Claim 9 recites similar features.

For example, the pattern inspection apparatus recited in Claims 1 and 9 has a space separation mechanism to separate transmitted light and reflected light in the detection optics. As a result, the transmitted light and reflected light from a subject can be obtained from a field of view that is spatially separated within an observation field of the pattern. Thereby, loss of light due to the separation of the transmitted light and the reflected light can be prevented in the detection optics. Accordingly, pattern defects on the subject can be inspected by use of both the transmitted light and reflected light, even when short-length light is used, resulting in a light loss reduction in the detection optics meaning that the inspection can be conducted with satisfactory sensitivity.¹ For example, in the pattern inspection apparatus of Claim 17, illustrated in a non-limiting example in FIG. 11, the transmitted light beam and reflected light beam are irradiated in parallel with a predetermined space there between by use of half mirror 2 and reflecting mirror 13. Thus, different areas of the polarization beam splitter 9 are irradiated with the respective beams. Since the position to dispose the polarization beam splitter 9 is the focal plane position, the irradiated area is also spatially separated.²

In contrast, Elyasaf does not have a space separation mechanism. The outstanding Action states on page 3 that element 30 corresponds to the space separation mechanism, however element 30 of Elyasaf is a polarization beam splitter and, as a result, transmitted light and reflected light are not imaged in separated areas in Elyasaf, see FIGS. 2a through 2c. For example, the reflected image of FIG. 2b and the transmitted image of FIG. 2c are complementary to each other, and are recognized to be the images of the same portion. Thus,

¹ specification page 16, line 21 to page 17, line 11

² specification page 35, lines 7-2.

the polarizing beam splitter 30 merely splits incident light from a second quarter wavelength retarder 28 into a p-polarized radiation beam and an s-polarized radiation beam.

In addition, the Dayal et al. (USP 7,046,352 B1, herein Dayal) reference cited in the Official Action mailed November 15, 2006, also does not have a feature equivalent to the space separation mechanism recited in the independent claims.

In addition with respect to independent Claim 17, Applicants respectfully submit that the transmitted light and reflected light described in Elyasaf and Dayal are coaxial beams that pass through or reflect from the same point, and thus the configuration recited in Claim 17 of the present application cannot be garnered therefrom.

Accordingly, Applicants respectfully submit that independent Claims 1, 9 and 17, and claims depending therefrom, patentably distinguish over Elyasaf in addition to any prior cited references such as Dayal.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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